

Amendments to the Drawings

Kindly replace the original drawing sheet containing Figures 2A and 2B with the attached Replacement Sheet containing amended Figures 2A and 2B. An Annotated Sheet with a marked-up version of Figures 2A and 2B is provided to assist the Examiner in readily identifying the amendments made to Figures 2A and 2B. In particular, numeric representation of the cooling chamber, compressor, temperature sensor, and controller has been added to the figures to support the features of the invention specified in the claims.

Attachments: Replacement Sheet
Annotated Sheet

REMARKS

Claims 19-40 are currently pending in the application. By the present amendment, claims 19-20 have been cancelled, claims 21-23, 26-27, and 29 have been amended, and new claim 41 has been added.

Support for new claim 41 can be found in paragraphs 25-36.

Applicants are filing herewith a substitute specification incorporating the insertion of the Cross-Reference to Related Applications section, as added in the First Preliminary Amendment, filed August 11, 2006. The substitute specification also inserts the appropriate section headings throughout the specification, and adds part numerals to the cooling chamber, compressor, temperature sensor, and controller as referenced throughout the specification.

Figures 2A and 2B of the drawings have been amended to include numeric representation of the cooling chamber, compressor, temperature sensor, and controller. Support for this amendment can be found throughout the substitute specification.

Applicants believe the amendments made herein add no new matter. Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based on prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to be attached thereto.

Reconsideration and reexamination of the application is respectfully requested in view of the amendments and the following remarks.

Information Disclosure Statement

The Examiner states that the information disclosure statement filed August 11, 2006, fails to comply with the provisions of 37 CFR 1.98(a)(2) because a legible copy of each cited foreign patent document has not been provided. The Examiner also states that the information disclosure statement fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance of each patent that is not listed in the English language. Applicants are herewith submitting a new information disclosure statement with

the filing of this response to include copies of the cited foreign patent documents as well as English abstracts for any of the references not in the English language. Applicants would like to draw to the Examiners attention that as the U.S. patent applications, publications, and the foreign patent document JP4263771 on the information disclosure statement have been approved by the Examiner, they are not being re-submitted herewith. Further, rejected foreign reference number JP5272854, is not being re-submitted herewith as it was cited by the Examiner in the recent Office Action mailed July 1, 2009.

Applicants thank the Examiner for considering the information disclosure statement filed January 24, 2008, even though it failed to comply with 37 CFR 1.98(a)(3) because it did not include a concise explanation of the relevance of each patent listed that is not in the English language.

Objections to the Drawings

The drawings are objected to under 37 CFR 1.83(a) for failure to show the “cooling chamber”, “compressor”, “temperature sensor”, and “controller” of the claims. Applicants have amended Figures 2A and 2B to show numeric representation for the cooling chamber, compressor, temperature sensor, and controller. Applicants believe this amendment to be fully supported by the claims and the application as filed, and respectfully request withdrawal of the objection.

Objections to the Specification

The specification is objected to because of the layout. A substitute specification is included to insert the section headings as suggested in the office action. As stated by the examiner, the layout described in 37 CFR 1.77(b) is merely a guideline that illustrates a preferred layout, and is not a requirement but a suggestion. For this reason, the sections that are not applicable to the application have been omitted.

The substitute Specification also includes the Preliminary Amendment filed on August 11, 2006, which requested the insertion of the Cross-Reference to Related Applications section and the claim of priority to International Application No. PCT/EP2005/050590, which claims priority on European Application Nos. EP 04003144.5 and EP 04008721.5.

Further, the substitute specification also adds part numerals to the cooling chamber, compressor, temperature sensor, and controller as referenced throughout the specification.

Claim Rejections Under 35 U.S.C. §112

Claims 26 and 38 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Also, claims 28-38 are rejected for incorrectly incorporating a device, not a method, as claimed in the preamble. The rejection is respectfully traversed. Claims 26 and 27 have been amended to correct this error. Claims 26 and 27, and ultimately claims 28-38, now correctly depend from claim 23, which claims a method. Applicants request withdrawal of the rejection of claims 26-38.

Claim Rejections - 35 U.S.C. §102

Claims 19-35 stand rejected under 35 U.S.C. §102(b) as being anticipated by JP 05-272854 (Machine Translation). The rejection is respectfully traversed. Claims 19-20 have been canceled, and claims 21 and 22 have been amended to depend from new claim 41. Therefore, the rejection will be addressed with respect to claim 23 and new claim 41.

Claim 41 calls for a refrigerator comprising: (1) a cooling chamber for cooling a food item placed therein; (2) a compressor having an adjustable cooling capacity; (3) a temperature sensor providing a signal representative of the temperature of the cooling chamber. Further, claim 41 calls for (4) a controller operably coupled to the compressor and temperature sensor to receive the signal over time from the temperature sensor such that the controller controls the operation of the compressor to maintain the temperature within the cooling chamber at a set temperature, and determines an increase in the temperature of the cooling chamber indicative of the addition of a warm food item into the cooling chamber, where the controller increases the cooling capacity of the compressor to reduce the temperature in the cooling chamber below the set temperature an amount to compensate for the load of the warm food item.

For Machine Translation to anticipate claim 41, each and every limitation in claim 41 must be found in Machine Translation. As shown below, such is not the case, and the anticipation rejection fails.

Machine Translation discloses a refrigerator with the capability to judge the insertion of a food load, upon which forced cooling is automatically started, and a forced cooling time is decided according to the size of the injection load. The aim of the quick cooling function is to provide forced cooling while avoiding any unnecessary or prolonged quick cooling operation. The refrigerator comprises a fan, a compressor, a door opening detection means for detecting the opening and closing of the freezer door, a temperature sensor 53 for detecting the temperature of the quenching room, and a temperature sensor 54 for detecting the temperature of a load. The refrigerator control device controls the operation of the compressor and fan after the door has been determined to have been closed. The injection of a load is judged based on the detection of a temperature change, as sensed by a temperature sensor 54 (*paragraphs 6-7, and 19*).

The quick freezing control means 61 judges the injection of load based on the detection of the door opening by door switch 59, which outputs a detection signal, and the load temperature sensor 54. The load discrimination section 62 decides the quenching time based on the judged size of the load, as detected by the load temperature sensor 54 and the quenching room temperature sensor 53. The fuzzy reasoning part 65 decides on the quenching time Q by fuzzy reasoning from the temperature rise value B and the temperature lowering speed C by application of the load, and the degree A of the quenching room temperature. The control section 63 then controls the operation of the compressor motor 55, the blower motor 56, the H damper 57, and the R damper 58 (*paragraphs 22-23*). Further, the quick freezing control means 61 judges the calorific capacity of the load based on both the temperature of the quenching room, as detected by the temperature sensor 53, and the temperature of the load, as detected by the load temperature sensor 54 (*paragraph 49*).

Machine Translation does not disclose a refrigerator having a controller that increases the cooling capacity of the compressor to reduce the temperature in the cooling chamber *below the set temperature an amount to compensate for the load of the warm food item*. Machine Translation does teach running the compressor in response to the detection of the addition of a load of warm food, but fails to disclose driving the temperature of the cooling chamber below that of the set temperature, let alone doing so for an amount to compensate

for the load of the warm food item. Driving the temperature below the set temperature is referred to in the application as “over-cooling”, and Machine Translation does not disclose the concept of over-cooling. Therefore, for these reasons, Machine Translation does not anticipate claim 41, and claim 41 is patentable. Claims 21 and 22 are also patentable based on their ultimate dependency on claim 41.

Claim 23 calls for a method for controlling a cooling capacity of a compressor in a refrigerator having a cooling compartment, the method comprising: (1) controlling the operation of the compressor to maintain the temperature within the cooling chamber at a set temperature; (2) determining a variation in the temperature of the cooling compartment in response to an increased load due to the addition of at least one warm food item in the cooling compartment; and (3) increasing the cooling capacity of the compressor in response to the determined variation in the temperature to reduce the temperature in the cooling chamber below the set temperature an amount to compensate for the load of the at least one warm food item.

For Machine Translation to anticipate claim 23, each and every limitation in claim 23 must be found in Machine Translation. Such is not the case, and the anticipation rejection fails.

As described above, Machine Translation does not disclose a method comprising, in part, increasing the cooling capacity of the compressor in response to the determined variation in the temperature to *reduce the temperature in the cooling chamber below the set temperature an amount to compensate for the load of the at least one warm food item*. Machine Translation does not teach the concept of an intentional over-cooling of the cooling chamber, as discussed above. Therefore, for this reason, Machine Translation does not anticipate claim 23, and claim 23 is patentable. Claims 24-35 are also patentable based on their ultimate dependency on claim 23.

Claims 23, and 39-40 stand rejected under 35 U.S.C. §102(b) as being anticipated by Fung (U.S. Patent No. 5,586,444). The rejection is respectfully traversed.

For Fung to anticipate claim 23, each and every limitation in claim 23 must be found in Fung. As shown below, such is not the case, and the anticipation rejection fails.

Fung discloses a control for a commercial refrigeration system in which the system responds quickly to an increase or decrease in the refrigeration load of the system, but “overshoot and undershoot of the control are minimized”, thereby reducing the frequency that compressors must be turned on or off (emphasis added). Fung teaches controlling the compressors so that the control variable (one example of which is the temperature inside the refrigerator case) is as near the target value as possible. See Col. 1, ln. 51-55; Col. 4, ln. 48-66; Col. 6, ln. 6-12 and 19-24; and Col. 7 ln. 43 to Col. 8, ln. 19 for numerous examples in which Fung teaches keeping the temperature of the refrigerator case as close to the target value as possible.

Fung does not disclose a method comprising, in part, increasing the cooling capacity of the compressor in response to the determined variation in the temperature to *reduce the temperature in the cooling chamber below the set temperature an amount to compensate for the load of the at least one warm food item*. In fact, what Fung discloses, teaches away from the concept of an intentional over-cooling of the cooling chamber, as discussed above. Fung is trying to maintain the temperature as closely as possible to the set temperature because it is trying to minimize the amount of overshoot and undershoot. Claim 23 calls for intentionally operating the compressor to reduce the temperature below the set temperature for an amount to compensate for the load of the at least one warm food item. Therefore, for these reasons, Fung does not anticipate claim 23, and claim 23 is patentable. Claims 39-40 are also patentable based on their ultimate dependency on claim 23.

Claim Rejections - 35 U.S.C. §103

Claims 36-38 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Machine Translation in view of Fung. The rejection is respectfully traversed.

Claims 36-38 ultimately depend from independent claim 23, which has not been rejected as being obvious in view of the combination. As claim 23 is now amended to overcome the anticipation rejection, claims 36-38 depend from an allowable base claim and are likewise allowable, which renders moot the rejection of claims 36-38.

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Examiner: Paolo Gonzalez
Group Art Unit: 4136

Conclusion

For the reasons discussed above, all claims remaining in the application are allowable over the prior art. Early notification of allowability is respectfully requested. If there are any remaining issues which the Examiner believes may be resolved in an interview, the Examiner is respectfully invited to contact the undersigned.

Respectfully submitted,
ALESSANDRO BOER ET AL.

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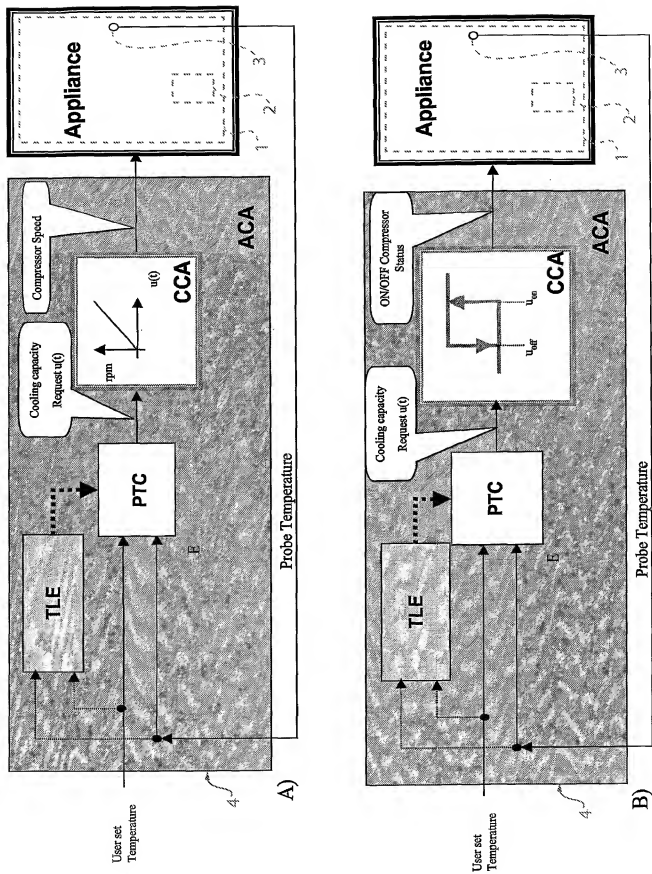


Figure 2